DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY MATERIEL COMMAND
5001 EISENHOWER AVENUE, ALEXANDRIA, VA 22333-0001

AMC REGULATION NO. 10-75

1 October 1997

Organization and Functions

MISSION AND MAJOR FUNCTIONS OF THE U.S. ARMY RESEARCH LABORATORY

Local supplementation of this regulation is prohibited unless prior approval is obtained from the proponent.

1. **Purpose**. This regulation sets forth the mission and major functions of the U.S. Army Research Laboratory (ARL) and prescribes relationships with higher and collateral headquarters.

2. **Mission**. The mission of ARL is to execute fundamental and applied research to provide the Army the key technologies and analytical support necessary to assure supremacy in future land warfare.

3. **Major functions**. a. Conduct basic and applied research resulting in technologies that support state-of-the-art capabilities in the analysis, distribution, and/or assimilation of real or simulated digitized battle space information.

b. Manage basic and applied research, experimentation, technology, evaluation and engineering for weather exploitation, target area meteorology, synthetic combat environments and atmospheric propagation.

c. Develop technologies to transform dynamic, complex, multi-source battle space information into knowledge to support the war fighter.

d. Enhance the lethality and survivability of the individual soldier and the Army’s advanced weapon systems.

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* This regulation supersedes AMC-R 10-75, 25 July 1988.

e. Conceive, exploit and transition novel weapons concepts, materials and advanced technologies.

f. Solve technical problems associated with developmental and fielded weapon systems.

g. Provide technology and support for enhanced survivability and lethality system assessment and the Army’s decision making process.

h. Perform innovative research to advance the state-of-the art in selected areas of the basic disciplines of physics, chemistry, bioscience, electronics and advanced design to meet Army combat needs and solve the critical technical barriers limiting the performance, reliability, and affordability of battlefield systems.

i. Advance the technology base in solid-state physics, radiation effects, electrochemistry, high frequency electronics, photonics, microelectromechanics, wide band-gap electronic materials, nanoscience, optoelectronics, biodetection, display phosphors, and fabrication process sciences and apply these to such Army needs as cooled and uncooled infrared detectors, lasers, optical systems, signal processing, and microwave and millimeter-wave sensors.

j. Perform research in sensor technology to provide affordable near-perfect situation awareness and rapid, precise discrimination and targeting of all threats in all environments, and execute the materiel implementation of the technology in support of Reconnaissance, Intelligence Surveillance, and Target Acquisition (RISTA), fire control, guidance, and fuzing applications.

k. Research in directed energy and power storage to provide the Army and Department of Defense (DOD) the capability for enhanced survivability of military systems and equipment to current and future directed-energy weapons threats, to enhance lethality of advanced directed energy weaponry, and to develop radio frequency (RF) weaponization technologies for use in operations other than war to expand the flexibility for the warfighter.

l. Conduct a broad-based program of scientific research and technology directed toward optimizing soldier performance and soldier-machine interactions to maximize battlefield effectiveness, and provide the Army with human factors integration

leadership and manpower and personnel integration (MANPRINT) support to ensure that soldier performance requirements are adequately considered in technology development and system design.

m. Provide support to the U.S. Army Materiel Command (AMC) Joint Logistics Advanced Concept Technology Demonstration Office by providing the Operational Users (Commanders in Chief (CINC) and Combined Joint Task Force (CJTF) Commanders) with the capability to rapidly plan and execute more responsive and efficient logistics support to military operations.

n. Conduct research and technology directed toward development of human factors technologies and design principles that (1) protect and extend the soldier's visual, auditory, and other sensory perception of the battlefield under hostile and highly stressed conditions; (2) enable the individual soldier, crew, and battle staff to comprehend and manage the vast quantities of data expected to flow across the digitized battlefield; and (3) effectively integrate the soldier operator, maintainer, and trainer in evolving crew station, equipment, and unit designs.

o. Determine the survivability and lethality of Army systems and technologies to the full spectrum of battlefield threats and environments (Ballistic, Chemical-Biological, Nuclear, Electronic Warfare, Information Warfare and Atmospheric Effects) to directly support Program Managers and Materiel Developers, evaluators, users, decision makers and others.

p. Conduct a wide variety of modeling/simulation, laboratory/ field experiments and analysis activities and develop appropriate tools, techniques and methodologies that allow these analysis activities to be performed efficiently and the results to be accurate, timely, and responsive.

q. Manage and execute research, exploratory, and advanced development programs in vehicle structures, propulsion and rotorcraft aeromechanics to provide technical and engineering support to Army vehicle developers.

r. Develop, maintain, and extend the technology base for vehicle loads, dynamics and structural mechanics, and the systems associated with turbine and reciprocating engines, components, and drive systems.

s. Provide the Army and DOD with research and advanced development into advanced computational technologies such as scalable parallel systems and algorithms, and selected foundation research areas such as Computational Fluid Dynamics and Computational Penetration Mechanics.

t. Perform research in advanced networking strategies and technologies.

u. Provide the Army with collaborative research through the Army High Performance Computing Center, and provide DOD with the administration of a Major Shared Resource Center.

v. Establish and direct the development and evaluation of concept experiments that exploit emerging technologies for future Army systems.

4. **Relationships**. a. Command relationships.

(1) The Director, ARL is under the direct command of the Commanding General, HQ AMC. The Commander/Chief of Staff, ARL will assist the Director, ARL in commanding the ARL by exercising, within the mission area, direction over the command.

(2) Interface between AMC major subordinate commands (MSC), program executive officers (PEO), universities and other organizations, and ARL regarding the assignment and management of materiel will be prescribed in Department of the Army (DA)/AMC regulations, letters of instructions (LOI), memoranda of understanding (MOU), charters, and other binding directives.

b. Staff relationships. Within the ARL Command Group, the Deputy Director; Associate Director for Plans, Programs and Budget; and Chief of Staff/Commander supervise and direct specific elements and functions of the Laboratory as assigned by the Director.

c. Support relationships. The ARL Chief of Staff organization is responsible for the direction, control and execution of all primary corporate staff and operating support functions. The organization provides administrative and support services to ARL organizational elements at the Adelphi Laboratory Center (ALC), Adelphi, Maryland; Aberdeen Proving Ground (APG), Maryland; White Sands Missile Range (WSMR), New Mexico; and oversees support operations for ARL elements collocated at the National Aeronautics and Space Administration (NASA) Langley Research Center, Hampton, Virginia and the NASA Lewis Research Center, Cleveland, Ohio. In performing site support, the organization administers ARL's assets at Adelphi, Aberdeen and White Sands, and exercises matrix management authority to interface between ARL organizational elements and host installations at Aberdeen and White Sands. ARL is a host at the Adelphi installation, and is a tenant at the other locations.

The proponent of this regulation is the United States Army Materiel Command. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) to the Commander, HQ AMC, ATTN: AMCRM-O, 5001 Eisenhower Avenue, Alexandria, VA 22333-0001.

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